

IN THE CLAIMS

Please amend claims as follows:

1. (Currently Amended) A method for reversibly converting a data format in that a forward transformation and a backward transformation are reciprocally conducted for data between unit systems having different resolution levels defined by a brightness and a color difference,

wherein in the forward transformation and the backward transformation, a first unit system having a lower resolution level is used as a common unit system, and a reversible data conversion is conducted by an integer operation for data in the first unit system having the lower resolution level and data in a second unit system having a higher resolution level higher than the first unit system,

wherein the first unit system having the lower resolution level is for a first color space and the second unit system having the higher resolution level is for a second color space based on primary colors of lights and, the first color space being other than the second color space.

2. (Original) The method as claimed in claim 1, wherein the first unit system is a first color space having the lower resolution level, and the second unit system is a second color space having the higher resolution level,

wherein in a case in that a digital color conversion by quantizing the first color space having the lower resolution level and being analog, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color

space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

3. (Cancelled)

4. (Original) The method as claimed in claim 1, wherein the first unit system is a first color space having the lower resolution level and the second unit system is a second color space having the higher resolution level,

wherein in a case in that a digital color conversion by quantizing the first color space having the lower resolution level and being analog, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

5. (Cancelled)

6. (Original) The method as claimed in claim 1, wherein the first unit system is a first color space having the lower resolution level and the second unit system is a second color space having the higher resolution level,

wherein in a case of conducting a color conversion in accordance with an international standard in which the data format for converting an analog video signal into digital data is specified, by using the first color space as the common unit system, the reversible data conversion

is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

7. (Cancelled)

8. (Original) The method as claimed in claim 1, wherein the first unit system is a first color space having the lower resolution level, and the second unit system is a second color space having the higher resolution level,

wherein in a case of conducting an original color based on the brightness and the color difference, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

9-11 (Cancelled)

12. (Currently Amended) ~~The method as claimed in claim 1,~~ A method for reversibly converting a data format in that a forward transformation and a backward transformation are reciprocally conducted for data between unit systems having different resolution levels,

wherein the forward transformation and the backward transformation, a first unit system having a lower resolution level is used as a common unit system, and a reversible data conversion

is conducted by an integer operation for data in the first unit system having the lower resolution level and data in a second unit system having a higher resolution level higher than the first unit system,

wherein the first unit system is a BMU unit system using an inch unit system and the second unit system is a 1/100 mm unit system using a meter unit system, and by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

13. (Cancelled)

14. (Currently Amended) An apparatus for reversibly converting a data format in that a forward transformation and a backward transformation are reciprocally conducted for data between unit systems having different resolution levels defined by a brightness and a color difference, comprising a data format reversibly converting part for reversibly converting a data format,

wherein in the forward transformation and the backward transformation, a first unit system having a lower resolution level is used as a common unit system, and a reversible data conversion is conducted by an integer operation for data in the first unit system having the lower resolution level and data in a second unit system having a higher resolution level higher than the first unit system.

wherein the first unit system having the lower resolution level is for a first color space and the second unit system having the higher resolution level is for a second color space based on primary colors of lights and, the first color space being other than the second color space.

15. (Original) The apparatus as claimed in claim 14, wherein the data format reversibly converting part conducts the reversible data conversion in that the first unit system is a first color space having the lower resolution level, and the second unit system is a second color space having the higher resolution level,

wherein the data format reversibly converting part conducts a reversible data conversion in a case in that a digital color conversion by quantizing the first color space having the lower resolution level and being analog, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

16. (Cancelled)

17. (Original) The apparatus as claimed in claim 14, wherein the data format reversibly converting part conducts the reversible data conversion in that the first unit system is a first color space having the lower resolution level and the second unit system is a second color space having the higher resolution level,

wherein in a case in that a digital color conversion by quantizing the first color space having the lower resolution level and being analog, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

18. (Cancelled)

19. (Original) The apparatus as claimed in claim 14, wherein the data format reversibly converting part conducts the reversible data conversion in that the first unit system is a first color space having the lower resolution level and the second unit system is a second color space having the higher resolution level,

wherein in a case of conducting a color conversion in accordance with an international standard in which the data format for converting an analog video signal into digital data is specified, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

20. (Cancelled)

21. (Original) The apparatus as claimed in claim 14, wherein the data format reversibly converting part conducts the reversible data conversion in that the first unit system is a first color space having the lower resolution level, and the second unit system is a second color space having the higher resolution level,

wherein in a case of conducting an original color based and the brightness and the color difference, by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

22-24 (Cancelled)

25. (Currently Amended) ~~The apparatus as claimed in claim 14,~~ A method for reversibly converting a data format in that a forward transformation and a backward transformation are reciprocally conducted for data between unit systems having different resolution levels,

wherein in the forward transformation and the backward transformation, a first unit system having a lower resolution level is used as a common unit system, and a reversible data conversion is conducted by an integer operation for data in the first unit system having the lower resolution level and data in a second unit system having a higher resolution level higher than the first unit system,

wherein the data format reversibly converting part conducts the reversible data conversion in that the first unit system is a BMU unit system using an inch unit system and the second unit

system is a 1/100 mm unit system using a meter unit system, and by using the first color space as the common unit system, the reversible data conversion is conducted by the integer operation, so that the backward transformation from first data in the first color space to second data in the second color space and the forward transformation from the second data in the second color space to third data in the first color space are conducted and the first data corresponds to the third data.

26. (Cancelled)

27. (Original) The method as claimed in claim 1, wherein the integer operation conducts the reversible conversion using powers of 2.

28. (Cancelled)

29. (Original) The method as claimed in claim 27, wherein the powers of 2 is conducted by bit shifts.

30. (Cancelled)

31. (Currently Amended) The method as claimed in claim 2, wherein ~~at a conversion from with respect to data in converted from~~ the first unit system to ~~data in~~ the second unit system and ~~a conversion from data in converted from~~ the second unit system to ~~data in~~ the first unit system, a process for rounding up if 5 or greater and rounding down if less than 5 is conducted.



32. (Currently Amended) The method as claimed in claim 2, wherein a first process for rounding up if 5 or greater and rounding down if less than 5 is conducted ~~at a conversion from~~ with respect to data in converted from the first unit system to ~~data in converted from~~ the second unit system, and a second process for rounding up if 6 or greater and rounding down if less than 6 is conducted at a conversion from data in the second unit system to data in the first unit system,

33. (Currently Amended) A computer-executable program to cause a computer to reversibly transform a data format, in that a forward transformation and a backward transformation are reciprocally conducted for data between unit systems having different resolution levels defined by a brightness and a color difference,

wherein in the forward transformation and the backward transformation, a first unit system having a lower resolution level is used as a common unit system, and a reversible data conversion is conducted by an integer operation for data in the first unit system having the lower resolution level and data in a second unit system having a higher resolution level higher than the first unit system,

wherein the first unit system having the lower resolution level is for a first color space and the second unit system having the higher resolution level is for a second color space based on primary colors of lights and, the first color space being other than the second color space.

34. (Currently Amended) A computer-readable recording medium recording program code to cause a computer to reversibly transform a data format, in that a forward transformation and a backward transformation are reciprocally conducted for data between unit systems having different resolution levels defined by a brightness and a color difference,

wherein in the forward transformation and the backward transformation, a first unit system having a lower resolution level is used as a common unit system, and a reversible data conversion is conducted by an integer operation for data in the first unit system having the lower resolution level and data in a second unit system having a higher resolution level higher than the first unit system;

wherein the first unit system having the lower resolution level is for a first color space and the second unit system having the higher resolution level is for a second color space based on primary colors of lights and, the first color space being other than the second color space.